

amount of the unavoidable impurity elements and composition, as recited in independent claim 1.

Ikushima teaches an age-hardening copper titanium alloy containing 2-6% by weight of titanium and composed of a substantially fully solution heat treated structure having an average crystal range size not exceeding 25 microns (Abstract). However, because Ikushima does not teach containing unavoidable impurity elements at no more than 0.01 mass%, Ikushima cannot prevent segregation precipitation of the second phase particles. As recited in claim 1, a portion of the unavoidable impurity elements exist in the second phase particles, thereby restricting the solid solution of the unavoidable impurity elements in the master phase. Moreover, because most of the unavoidable impurity elements are contained in the second phase particles, as recited in independent claim 1, where not less than 80% of the number of the second phase particles contain not less than 3% in total amount of the unavoidable impurity elements in composition, the claimed Cu alloy contains only a negligible trace amount of the unavoidable impurity elements in the master phase.

In contrast to the claimed Cu alloy, Ikushima teaches a  $\text{TiCu}_3$  alloy, which is different from the claimed alloy because it does not contain impurity elements, as claimed in independent claim 1. Moreover, because Ikushima does not contain the claimed unavoidable impurity elements, Ikushima cannot exhibit the advantages of almost no fluctuation within the master phase and almost no irregularities. As a result, Ikushima's alloy cannot exhibit age-hardenability, and it is not possible to obtain excellent strength on the basis of the age-hardenability, in contrast with the claimed invention.

The Office Action alleges that the "solution heat-treatment, working, and aging steps are overlapped by the cited reference; consequently, the properties as recited in the instant claims would have inherently possessed by the teachings of the cited references." (Office Action, page 3, lines 8-11). Applicants respectfully disagree. Ikushima teaches holding the

alloy at a temperature of 500°C to 700°C for a period of time of 1-20 hours (col. 3, lines 8-10). Accordingly, in Ikushima, fine and homogeneous second phase particles of  $\text{TiCu}_3$  (col. 3, line 13) are precipitated in a master phase by intermediate annealing performed at a low temperature (col. 3, lines 43-46), which is lower than both the solid solution forming temperature and the recrystallization temperature, and thus  $\text{TiCu}_3$  is positively precipitated. Accordingly, Ikushima does not teach a solution treatment in which the heating rate is not less than 20°C/s at least up to 600°C.

In Ikushima, the annealed material is held at a temperature higher than both the solid solution forming temperature and recrystallization temperature (col. 4, lines 15-16) for a period of time ending immediately after or before the secondary phase forms a complete solid solution in the master phase. Accordingly, the solution treatment in Ikushima keeps remaining  $\text{TiCu}_3$  and it is a solution treatment that is performed for recrystallization, not to improve bendability while suppressing precipitation of  $\text{TiCu}_3$ . Accordingly, it is clear that the solution treatment of Ikushima is significantly different than the solution treatment in the claimed invention. As such, because the solution treatment in Ikushima is different from the claimed invention, the properties of the claimed invention are not inherently exhibited by the alloy taught in Ikushima. Thus, it would not have been obvious to use Ikushima to arrive at the claimed invention, and Ikushima does not suggest or render obvious the features of independent claims 1-3. As a result, independent claims 1-3 are patentable over Ikushima. Thus, withdrawal of the rejection of the claims under 35 U.S.C. §103(a) is respectfully requested.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-3 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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